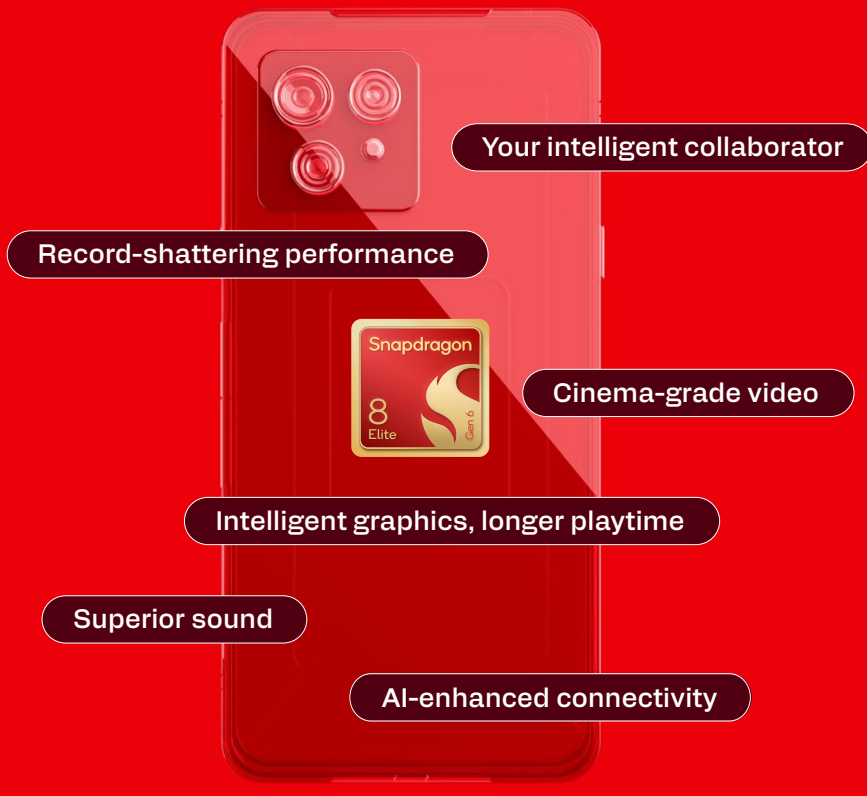
Snapdragon

Snapdragon® 8 Elite Extreme Gen 6 Mobile Platform



The Snapdragon 8 Elite Extreme Gen 6 Mobile Platform is intelligence that moves the world, purpose-built for the next era of agentic AI. It shatters performance barriers, transforming into your intelligent collaborator while powering cinema-grade video, next-generation gaming, and connectivity.

13% improved CPU performance

44% improved GPU performance

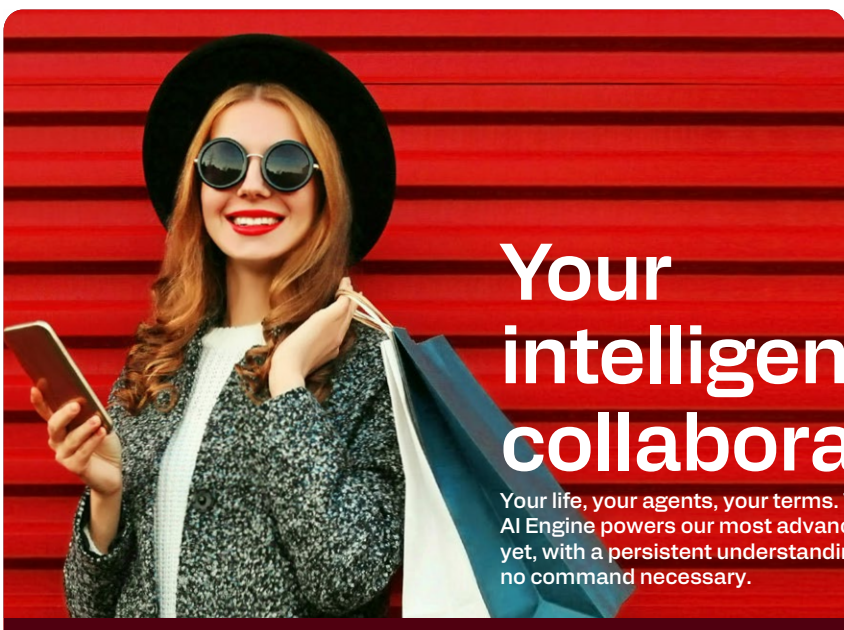
35% improved NPU performance

37% improved CPU power efficiency

40% improved GPU power efficiency

33% improved AI performance-per-watt

All comparisons made are in reference to previous generation, Snapdragon 8 Elite Gen 5 Mobile Platform. Results will vary, depending on OEM implementation and other factors.



Your intelligent collaborator

Your life, your agents, your terms. The Qualcomm® AI Engine powers our most advanced agentic AI yet, with a persistent understanding of your world—no command necessary.

End-to-end contextual awareness

For an AI agent to be truly personal, it needs a complete understanding of you. Snapdragon delivers comprehensive contextual intelligence by combining the Qualcomm® Sensing Hub, Qualcomm® Hexagon™ NPU, and Qualcomm Oryon™ CPU to continuously learn from your routines, preferences, and environment directly on device. The result is more personalized support that can anticipate what you need, adapt in the moment, and coordinate tasks across apps—without constant prompting.

Intuitive preferences

Let AI handle the mundane edits without taking the artistry out of it. On-device AI learns your creative DNA and automatically applies your personal style across photos, messages, and beyond.

Accelerated Gen AI

From long-document analysis to instant creative generation, the reengineered Hexagon NPU processes generative AI at exceptional speeds—without draining your battery. Summarize multi-page email threads, draft responses in your tone, and highlight next steps in a single prompt. Plus, generate lifelike images and videos that preserve the subtle nuances of lighting and shadow for stunning photorealistic results.

Cinema-grade video

Unleash your creative vision. Cinema-grade image quality and intuitive tools take you from filming the first frame to sharing the final edit—without ever leaving your phone.

- Capture cinematic looks with smooth gradients, natural colors, and refined detail with the **Elite Color Engine** with 3D LUT support.
- Shoot, edit, and post cinema-grade footage, all on your mobile device, thanks to the **Advanced Professional Video (APV)** codec.
- Intelligent pixel control helps every shot look its best, giving you more moments worth keeping.
- Enables the first commercial devices to record in 8k60 FPS and 4k240 super slow motion for the ultimate pro video quality in your pocket.

Intelligent graphics, longer playtime

An evolution in mobile gaming has arrived, with the unstoppable combination of AI and Snapdragon Elite Gaming™ Features. All-new AI-dedicated Adreno GPU matrix cores enable advanced AI models to deliver supercharged console-level graphics and visuals, while drastically increasing play times.

- Brand-new **Qualcomm® Adreno™ Neural Fusion**, supercharged with our new Adreno matrix cores, reduces GPU workloads while delivering superior graphics and faster frames without compromise.
- 18 MB Adreno High-Performance Memory with improved architecture brings 12% more power savings for smoother, long-lasting play.
- Explore the industry's top AAA titles on mobile, elevated by the complete Snapdragon Elite Gaming Suite for smooth, responsive play.

Superior sound

Tune in as AI orchestrates every layer of sound, from isolating vocals in recordings to remixing audio with professional precision.

- **AI Audio Separation** enables audio mixing, letting users isolate, enhance, or rebalance audio elements while boosting voices, reducing noise, and refining every detail after capture.
- **AI Voice Bubble** cuts through chaos, isolating your voice while filtering out surrounding chatter, whether you're on a call, recording a video, or using speakerphone in a busy space.
- Qualcomm® Spatial Audio Renderer anchors every sound to its source, enabling low latency and zero lag as you move and turn your head.

AI-enhanced connectivity

Stay connected and emboldened, wherever life takes you, with AI-driven 5G, satellite coverage, and Wi-Fi built for the next generation of connectivity.

- The **AI-powered Qualcomm® X105 5G Modem-RF** is the industry's first 3GPP Release 19-ready system, paving the road to 6G with faster uplink and downlink speeds plus improved power efficiency.
- Integrated NR-NTN (non-terrestrial network) support keeps you connected virtually anywhere, extending voice, video, and data coverage as well as NB-NTN for messaging.
- The first system to achieve 4x4 Wi-Fi configuration and over 10 Gbps speeds, **Qualcomm® FastConnect™ 8800** Mobile Connectivity System is 2x faster with 3x longer gigabit range*, built for next-generation Wi-Fi 8**, Bluetooth® High Data Throughput (HDT), Ultra Wideband, and Thread.

Specs spotlight

Artificial Intelligence
- Reengineered Hexagon NPU and Sensing Hub
- New Element Accelerator, Personal Scribe

CPU
- Next-gen Qualcomm Oryon CPU
- 2 Prime cores, up to 5 GHz

GPU
- Adreno Neural Fusion
- Adreno GPU with AI matrix cores

Camera
- 8k60 video capture
- APV ultra-high quality recording

5G
- Qualcomm X105 Modem-RF System
- Peak download speeds up to 14.8 Gbps

Wi-Fi
- FastConnect 8800
- Peak download speeds up to 11.6 Gbps

* Provided 4x4 system architecture, 320 MHz, RF FEMs, and Wi-Fi 8 ELR. Testing in internal labs through iperf at 1 Gbps compared against prior generation 2x2 160 MHz products.
** Available for select Android versions
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Specs and features

Artificial Intelligence

Qualcomm® AI Engine

Qualcomm® Adreno™ GPU with matrix cores

Qualcomm Oryon™ CPU with hardware-based AI acceleration

Qualcomm® Hexagon™ NPU
- New Element Accelerator
- 12 scalar + 8 vector + 1 tensor + 1 element configuration
- Hexagon Direct Link
- Micro Tile Inferencing
- 50% Larger shared memory
- 64-bit memory virtualization
- Support for INT2, INT4, INT8, INT16, FP8, FP16 precisions, including mix precision

Qualcomm® Sensing Hub
- Dual Micro NPUs for audio, voice, and sensors for creating personal knowledge graphs
- Dual Always-Sensing ISPs to support two concurrent always-sensing cameras
- Qualcomm® Personal Scribe

AI software
- Qualcomm AI Stack

5G Modem-RF System

Qualcomm® X105 5G Modem-RF
- 5G Advanced, 5G mmWave, and sub-6 GHz, 5G standalone (SA) and non-standalone (NSA) modes, standalone mmWave and mmWave-sub-6 dual connectivity, FDD, TDD

Downlink: Up to 14.8 Gbps

Uplink: Up to 4.2 Gbps
- mmWave: 8 carriers, 2x2 MIMO
- Sub-6 GHz: 4x6 MIMO
- 6nm node (mmWave-sub-6) transceiver with 30% lower power consumption

- Integrated quad-band GNSS support across L1, L2, L5, and L6
- 5th Gen Qualcomm® 5G AI Processor
- Qualcomm 5G PowerSave
- Fully integrated NB-NTN and NR-NTN support
- Qualcomm® Smart Transmit™ Plus technology with enhanced uplink support
- 6-antenna (6Rx) support for smartphones
- 6xCA with 500 MHz bandwidth for downlink
- 1024 QAM sub-6 GHz support
- Switched uplink with Rel-17 (FDD/TDD)
- Supplemental uplink
- Uplink 4-layer carrier aggregation (200 MHz)—UL MIMO
- Qualcomm® QTM565 mmWave module
- Global 5G multi-SIM, including Qualcomm® Turbo DSDA with 3CC + 1CC carriers support for higher throughput

- 3GPP Release 19 Hardware

- NB-IoT for extended coverage
- Supports all major global 5G bands, from 0.6 to 41 GHz

Wi-Fi, Bluetooth, UWB, & Thread

Qualcomm® FastConnect™ 8800 Mobile Connectivity System
- Peak Speed: 11.6 Gbps
- 802.11bn, 802.11be, 802.11ax, 802.11ac, 802.11a/b/g/n
- AI-enhanced Wi-Fi
- High Band Simultaneous (HBS) Multi-Link

Integrated Bluetooth
- Bluetooth® 6.3 wireless technology, LE Audio, Bluetooth Channel Sounding, Bluetooth High Data Throughput (HDT)

Integrated Ultra-Wideband (UWB)
- IEEE 802.15.4z, FiRA, CCC, CSA Aliro 1.0

Thread
- Standards: 1.4

Audio

Snapdragon Sound™ Technology Suite
- Qualcomm® aptX™ Adaptive and aptX Lossless audio
- Qualcomm® Expanded Personal Area Network (XPAN) technology
- Qualcomm Aqstic™ audio codec
- Qualcomm Aqstic smart speaker amplifier: Total Harmonic Distortion + Noise (THD+N)
- Playback: -108 dB
- Qualcomm Aqstic Speaker Max
- Qualcomm® Audio and Voice Communication Suite
- Qualcomm Spatial Audio Renderer with head-tracking

Display

On-Device Display Support
- 4K+ @ 120 Hz
- QHD+ @ 240 Hz

Maximum External Display Support
- Up to 4K @ 120 Hz
- Up to 8K @ 30 Hz

Scaling and Detail Enhancement
- HDR10, HDR10+, HDR vivid, and Dolby Vision HDR
- Display Uniformity Correction
- Display Aging Compensation

CPU

Custom-built Qualcomm Oryon CPU
- 2 Prime cores, up to 5.0 GHz
- 6 Performance cores, up to 4.0 GHz
- 16 MB Qualcomm Oryon Flex Cache
- 64-bit architecture

Camera

Qualcomm Spectra™ Image Signal Processor

Triple 20-bit AI-ISPs

Elite Color Engine with real-time 3D-LUTs

Support for the latest HDR,16-bit LOFIC, DCG+VS, and DCG, Staggered, QDOL, Less Blanking, and Multi-Frame HDR image sensors with seamless switching between any HDR mode
- Up to 64MP triple camera with Zero Shutter Lag
- Up to 108MP single camera with Zero Shutter Lag
- Up to 320MP photo capture

Snapdragon® Audio Sense

10-bit HEIF: HEIC photo capture and APV video capture

8K video capture @ 60 FPS

4K slow-motion video capture @ 240 FPS

1080p slow-motion video capture @ 960 FPS

Pro Sight video capture

Ultra-low light video capture in 4k60 with Bayer Noise Reduction and AI noise reduction in 4k30 FPS

Video super resolution

Bayer Massive Multi-Frame Noise Reduction with AI

AI video processing
- 16-bits of AI data per pixel
- Enhanced AI video segmentation @ 4k60 FPS
- Real-time AI skin and sky tone adjustments in 4k60 FPS

Visual Subsystem

New Adreno Neural Fusion

Adreno GPU with matrix cores

Optimized Adreno high-performance memory architecture with support for Tile Memory Heap Unreal Engine 5 Advanced Optimizations
- Real-time Hardware-Accelerated Ray Tracing with Lumen Global Illumination
- New MegaLights
- Nanite Virtualized Geometry

Full Snapdragon Elite Gaming™ Feature Support

API support: Vulkan 1.4 (Khronos 2026, Android 17 profiles), OpenGL ES 3.2, OpenCL 3.0 FP

Hardware-accelerated H.266, H.265, VP9, AV1 decoder

HDR Playback Codec support for HDR10+, HDR10, HLG, and Dolby Vision

Security

Trust Management Engine (Root of Trust) for platform-level security foundations, including Post Quantum Crypto based images verification

Qualcomm® Trusted Execution Environment (TEE)

Qualcomm® Type-1 Hypervisor for isolation from the high-level OS

Qualcomm® Wireless Edge Services (WES) enabling remote parties' device trust

Qualcomm® 3D Sonic Sensor and Qualcomm 3D Sonic Max (fingerprint sensor)

Level-2 compliant C2PA support for media provenance

Enhanced AI processing isolation and model protection

Location

Concurrent GPS, Glonass, BeiDou, Galileo, QZSS, NavIC

Triple frequency GNSS (L1/L2C/L5)

AI-based GNSS Location Gen 3

Sensor-Assisted Positioning 6.0

Urban pedestrian navigation with sidewalk accuracy

Global freeway lane-level vehicle navigation

Charging

Qualcomm® Quick Charge™ 5 Technology

Memory

Support for LP-DDR5x/6, up to 5300 MHz

Memory Density: Up to 24 GB

General Specifications

2nm Process Technology

USB Version 3.1 Gen 2; USB Type-C Support

Storage: UFS 5.0

Part Number: SM8975

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